

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
18 August 2005 (18.08.2005)

PCT

(10) International Publication Number
WO 2005/076009 A2

(51) International Patent Classification⁷: **G01N 33/68**

(21) International Application Number:
PCT/EP2005/000873

(22) International Filing Date: 28 January 2005 (28.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10 2004 005 273.5 28 January 2004 (28.01.2004) DE
10 2004 011 503.6 6 March 2004 (06.03.2004) DE

(71) Applicant (*for all designated States except US*): **IM-
MATICS BIOTECHNOLOGIES GMBH** [DE/DE];
Paul-Ehrlich-Strasse 15, 72076 Tübingen (DE).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **LEMMELE, Claudia**
[DE/DE]; Hundskapfklinge 42a, 72074 Tübingen (DE).
RAMMENSEE, Hans-Georg [DE/DE]; Sommerhalde 3,
72070 Tübingen-Unterjesigen (DE).

(74) Agents: **KRAUSS, Jan, B.** et al.; Boehmert & Boehmert,
Pettenkoferstr. 20-22, 80336 Munich (DE).

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished
upon receipt of that report*

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: METHOD FOR IDENTIFYING AND QUANTIFYING OF TUMOUR-ASSOCIATED PEPTIDES

(57) **Abstract:** Described is a method for identifying and quantifying of tumour-associated peptides, wherein first at least two different sources for obtaining the peptide are provided (tumourous and healthy tissue), and, separately of one another, the peptides from the different sources are chemically modified in an identical manner by using at least two different stable isotopes of the same element. Subsequently, the peptides are isolated by a chromatographic method, and the amino acid sequences of the peptides are determined, wherein the determination of the relative amount ratios of peptides having the identical sequence from different samples one to the other occurs by using a stable isotope in the chemical modification. Furthermore, the invention relates to a tumour-associated peptide having an amino acid sequence that is selected from the group consisting of SEQ-ID No. 1 to 36 from the accompanying sequence protocol, wherein the peptide has the ability to bind to a molecule of the human major histocompatibility complex (MHC) class-I. Furthermore, the invention relates to the use of the peptides for producing a medicament and for the treatment of tumourous diseases and/or adenomatous diseases. Furthermore, a pharmaceutical composition is described that comprises at least one of the peptides.



WO 2005/076009 A2